



The 8th Seminar of University Knowledge Bases

online 07–10 March 2022

An overview of the CRIS infrastructure available
in Europe – and (simplified) models
for its development

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Index for today's talk

- Introduction: What are CRIS systems?
- A diverse and quickly evolving CRIS landscape
- Homegrown, community-owned CRIS at a national level: a bit of history
- System interoperability and rules for research information exchange within national and regional CRIS systems
- A further level of system interoperability?

So what is a CRIS?

en.wikipedia.org/wiki/Current_research_information_system

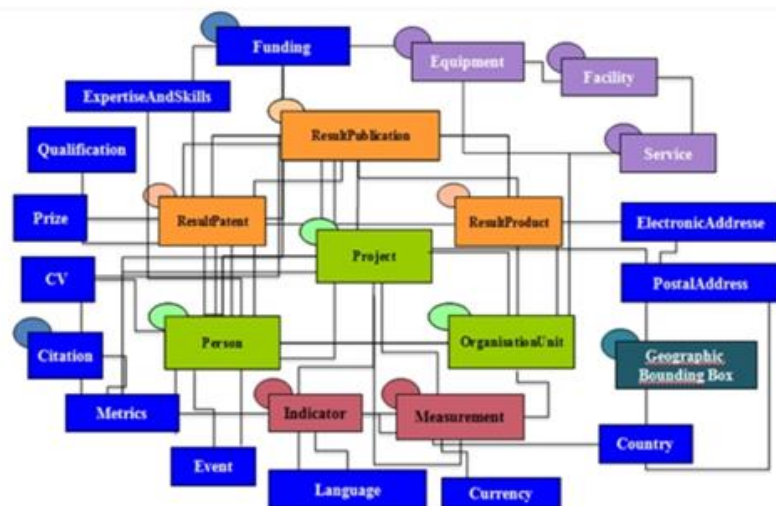


Current research information system

From Wikipedia, the free encyclopedia

A **current research information system (CRIS)** is a [database](#) or other [information system](#) to store, manage and exchange contextual metadata for the research activity funded by a research funder or conducted at a research-performing organisation (or aggregation thereof).^[1]

CRIS systems are also known as Research Information Management or RIM Systems (RIMS).^{[2][3]}

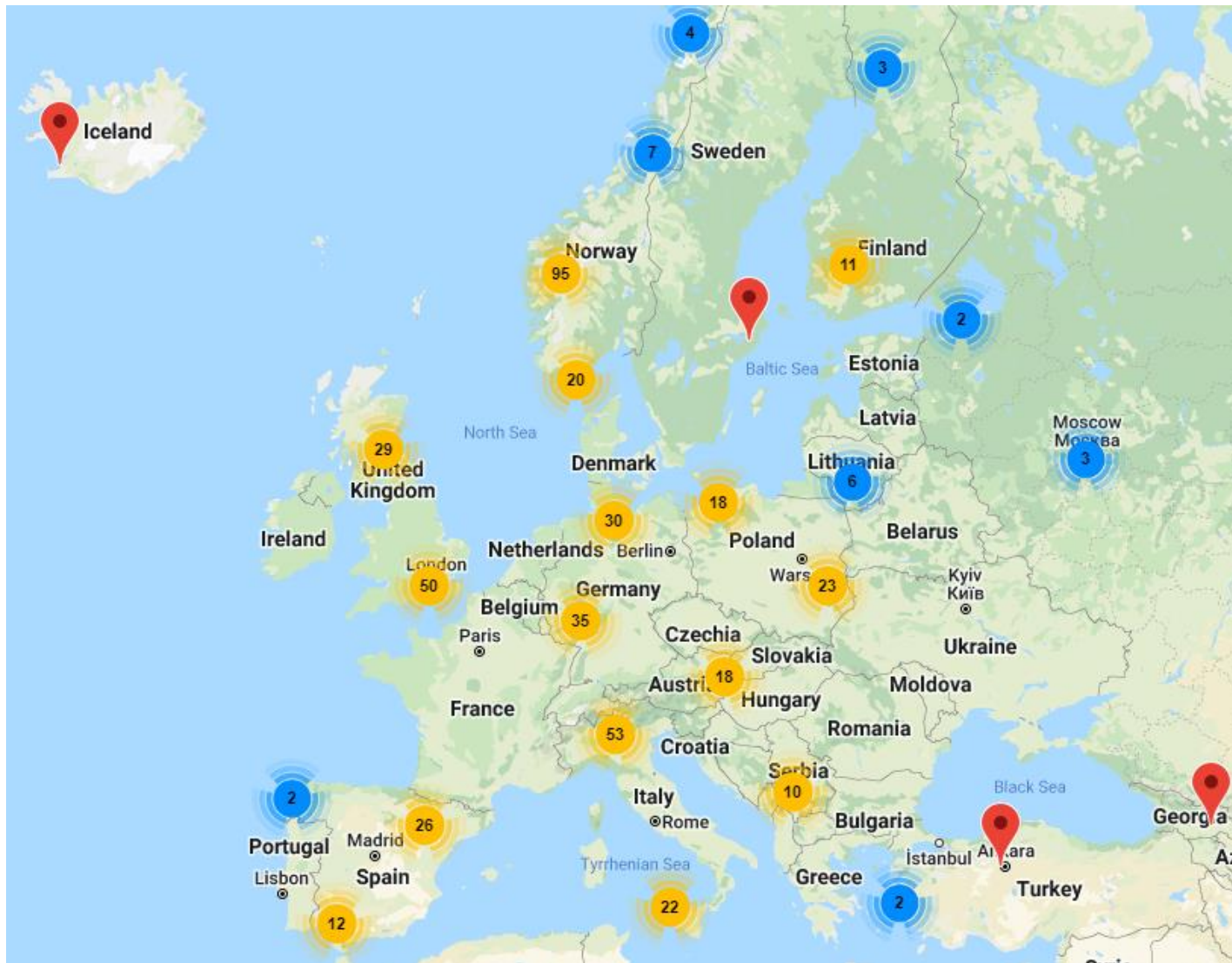


Features [\[edit \]](#)

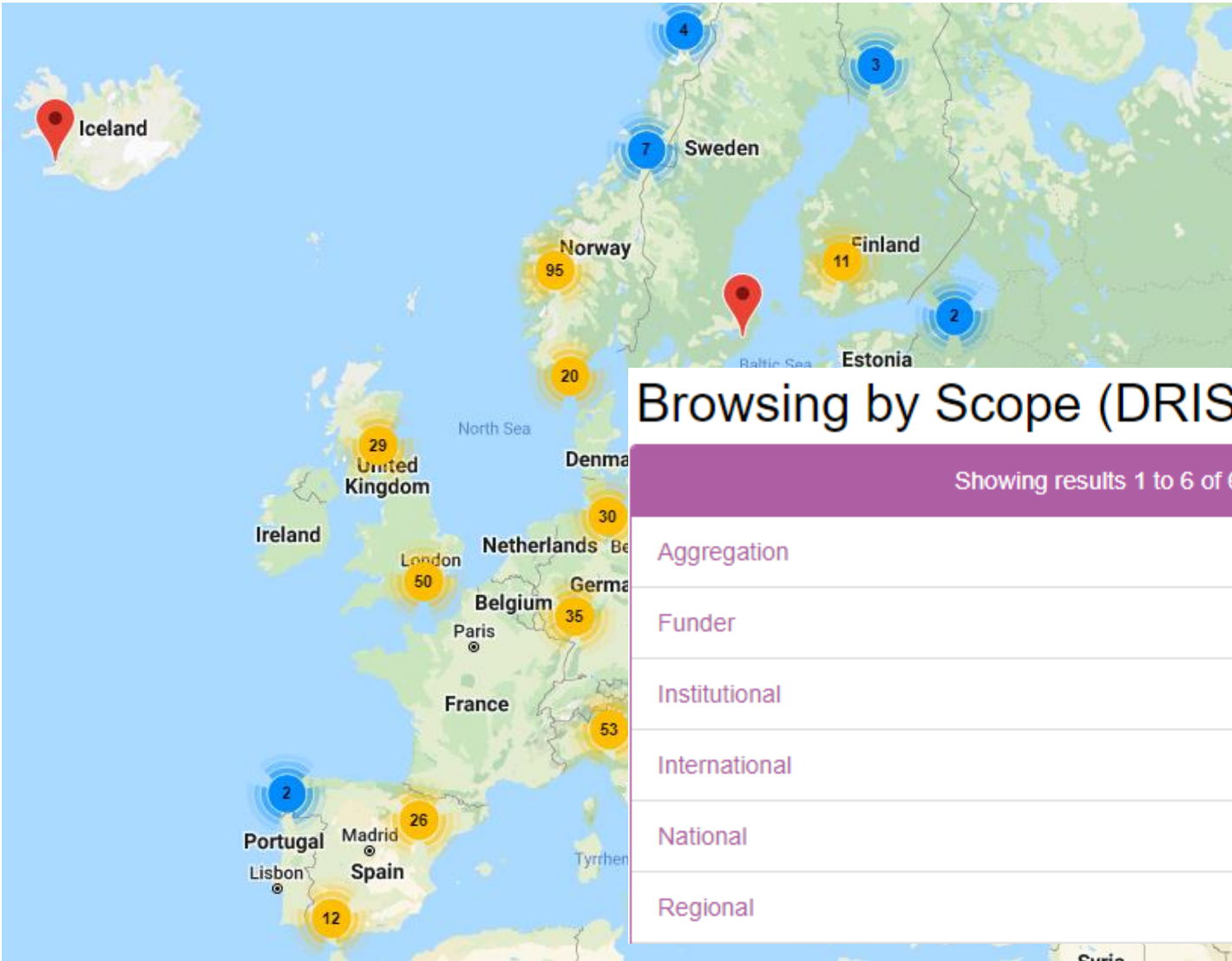
The data model underpinning a CRIS relies on a set of basic entities as defined by the Common European Research Information Format (CERIF [\[4\]](#)) model maintained by the non-profit organisation euroCRIS.

The links connecting these entities provide a standardised semantic layer that provides consistency to the data model. The basic CERIF entities are **people, organisations, projects and outputs** (publications, research data, patents). Further second-level entities in the comprehensive snapshot of research provided by CERIF are for instance funding, research facilities and equipment or skills.

A diverse CRIS landscape (w/ a focus on Europe)



A diverse CRIS landscape (w/ a focus on Europe)



Browsing by Scope (DRIS)

Showing results 1 to 6 of 6	
Aggregation	4
Funder	12
Institutional	937
International	1
National	19
Regional	4

A bit of (CRIS) history: METIS, a homegrown, community-owned system in the Netherlands

Onderzoeksinformatiesysteem Metis nu in gebruik bij alle Nederlandse universiteiten

Hoe het allemaal begon

Het was een nevelige dag ergens in het voorjaar van 1994 toen Hans Schoonbrood en ondergetekende richting de Vereniging van Samenwerkende Nederlandse Universiteiten (VSNU) togen om daar voor beleidsmedewerkers onderzoek van de instellingen een demo te geven van ons onderzoeksinformatiesysteem, toen nog OZIS geheten.

De “Metis Groep” anno 2005

De eerste universiteit die - al in 1994 - aan boord kwam was de Erasmus Universiteit Rotterdam, vervolgens volgden: Utrecht (1995), UvA (1996), Leiden, de VU en Tilburg (1997), Eindhoven (1998), Twente (1999), Maastricht en Delft (2001), Wageningen (2003) en - tenslotte - Groningen (2005).

The homegrown, community-owned model: a follow-up

Evento IRIS - 10 aprile 2014

IRIS - EVENTO 2014 dal titolo "CINECA presenta la nuova soluzione per la Ricerca Scientifica"

Il 10 Aprile 2014 Cineca ha presentato IRIS, il nuovo sistema per la Ricerca Scientifica. IRIS aderisce a standard di rappresentazione delle entità scientifiche (persone, prodotti, attrezzature, progetti, ecc.) riconosciuti a livello internazionale facilitando l'accesso degli atenei italiani a network scientifici internazionali.

The homegrown, community-owned model: a follow-up

Evento IRIS - 10 aprile 2014



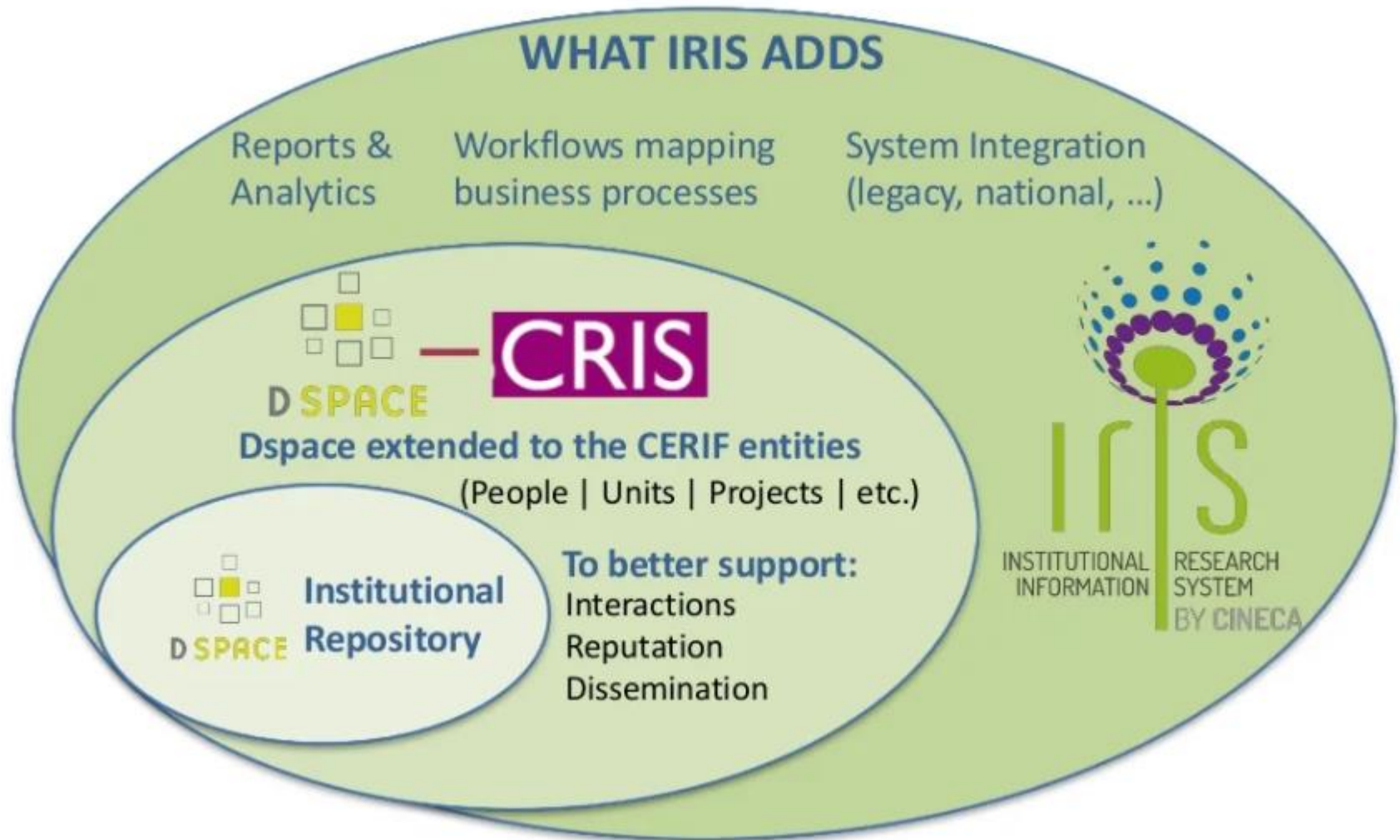
IRIS: Supporting & Managing the Research Life-Cycle

#EUNIS15

Dundee, 10-12 June

Andrea Bollini
Michele Mennielli

The value of a homegrown model



2015: The Big Migration

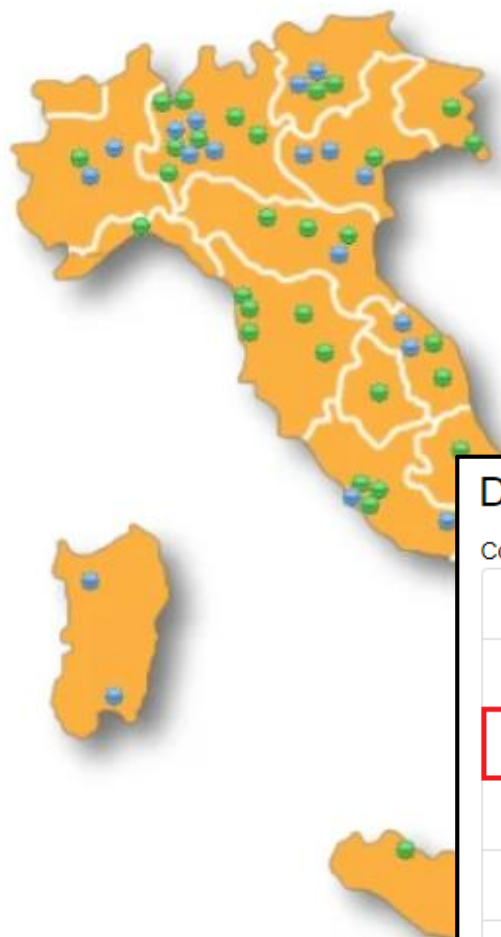


● In Production (37)

● Planned (23)

Period	Nr Institutions
Sep-Dec 2014	7
Jan-Apr 2015	25
May-Jul 2015	26

2015: The Big Migration



● In Production (37)

● Planned (23)

Period	Nr Institutions
Sep-Dec 2014	7
Jan-Apr 2015	25
May-Jul 2015	26

Discover

Country

India	362
Norway	132
Italy	76
United Kingdom	72
United States	43
Poland	39

Software

IRINS	361
Pure	173
CRISin	131
In-house-built	74
IRIS	70
Omega-PSIR	37

DRIS record WUT Base of Knowledge

Information

DRIS Details

Name of the CRIS WUT Base of Knowledge **Acronym** WUT Base of Knowledge

Description

OMEGA-PSIR@WUT is the fully functional CRIS operated at the Warsaw University of Technology (WUT). It provides the University Management with a complete view of research achievements of the University, and reports the achievements to the national authorities. It also functions as Institutional Repository, making it possible to archive full-texts, and provides access directly to the users. It is compliant with the OAI-PMH protocol. The system grants end-users access to the files according to the copyright permissions and the users' privileges. For example, for an authorized user a publication can be provided directly from the system, otherwise the system directs the user to the publisher site. The Knowledge Base stores all data referring to the scientific activities of researchers: publications, scientific reports, supervised theses, project documents, but also descriptions of project results (prototypes, technologies, software, data, etc). Whenever needed, the ontology can be extended. All the objects are semantically linked to each other, building a knowledge-rich semantic network.

Status Operational **Scope** Institutional **Date of establishment** 02-01-2013 **URI** <http://repo.bg.pw.edu.pl/index.php/en/>

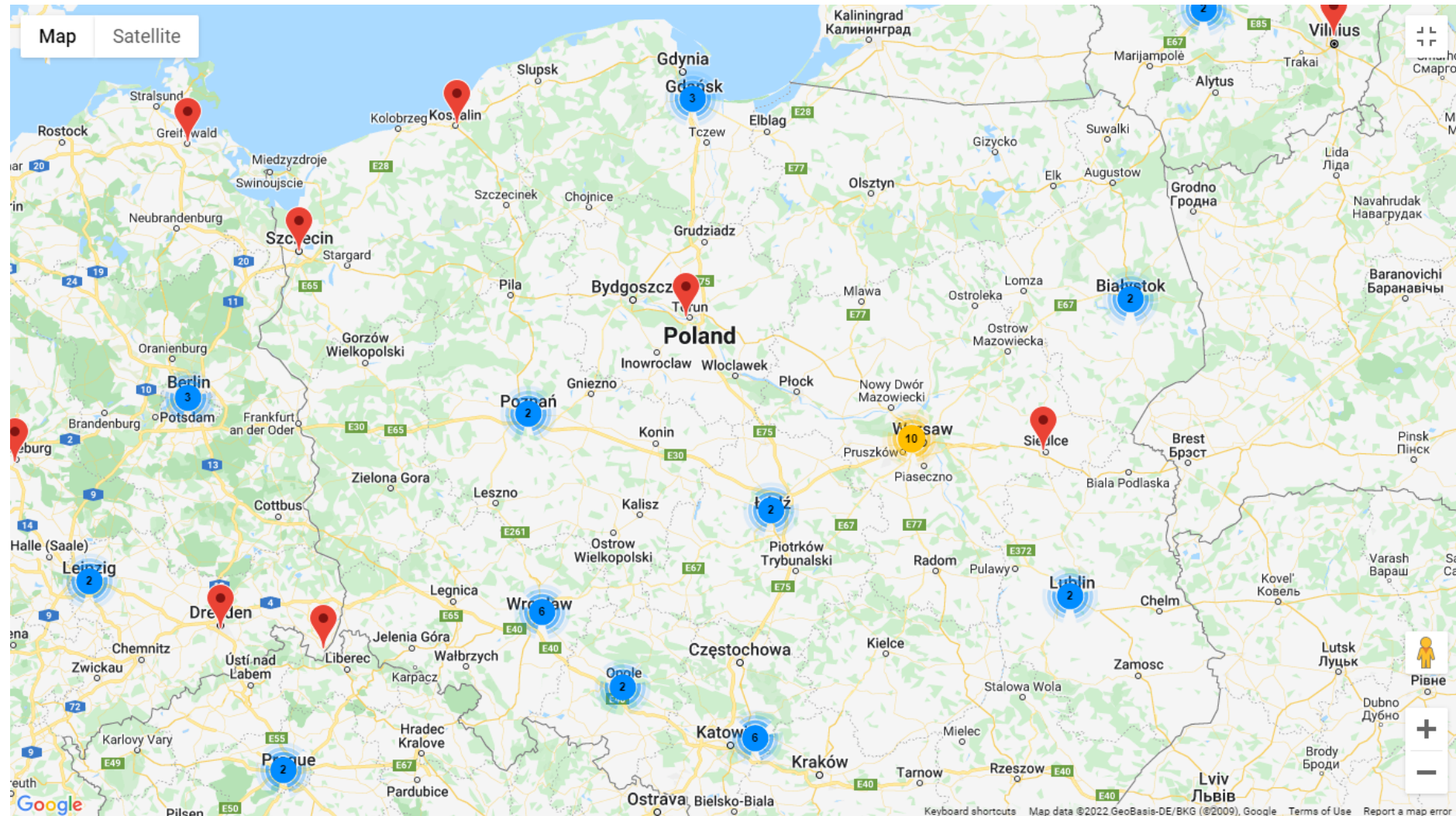
Number of users 4300 **Annual number of DB requests** 860,000

CERIF-Compatibility CERIF wrapped: Non-CERIF storage model but CERIF interface (query and reporting) **CERIF-version** CERIF-1.4

Links to systems within the institution Institutional Repository
HRM-System
Financial System
Library System
SIS (Student Information System)

Links to external systems outside the institution CRIS of other Institutions
National CRIS
National Repository
International Repository
Abstract Databases (Scopus, WoS...)

Relation with (institutional) Repository CRIS and Repository integrated into one system **Institution/organization** Warsaw University of Technology



Country

Poland

39

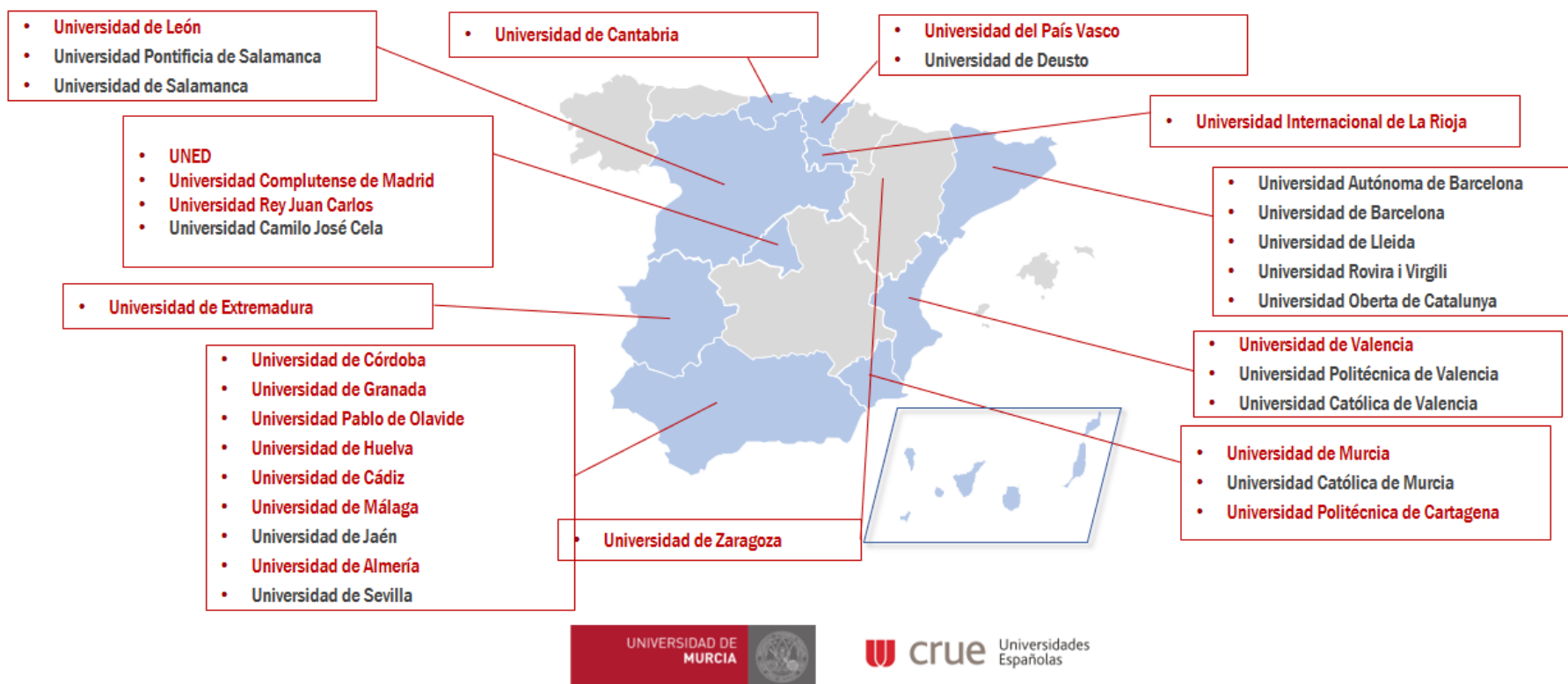
Software

Omega-PSIR

37

Colaboración Universidades CRUE

Convenio con el proyecto Hércules



Software

Pure

173

Breaking down silos with quality data relations

– how Pure enables uniform management reporting on top of CERIF

Bo Alroe and Thomas Vestdam

Atira A/S

Abstract

Management reporting at universities has traditionally been a labour intensive exercise, trying to capture and link unstructured and often duplicate data across a wide range of systems including Finance, Costing, Research repositories, Students and HR. Here we present how Pure enables uniform reporting by linking and refining input from individual researchers or administrative staff with information already present within existing administrative systems in the CERIF data model. We will include best practices based on real-life examples.



Situation around Covid-19: an update

LINKING RESEARCH INFORMATION ACROSS DATA SPACES

15th International Conference on Current Research Information
Systems (CRIS2022)
Dubrovnik, Croatia
May 12-14, 2022



Situation around Covid-19: an update

LINKING RESEARCH

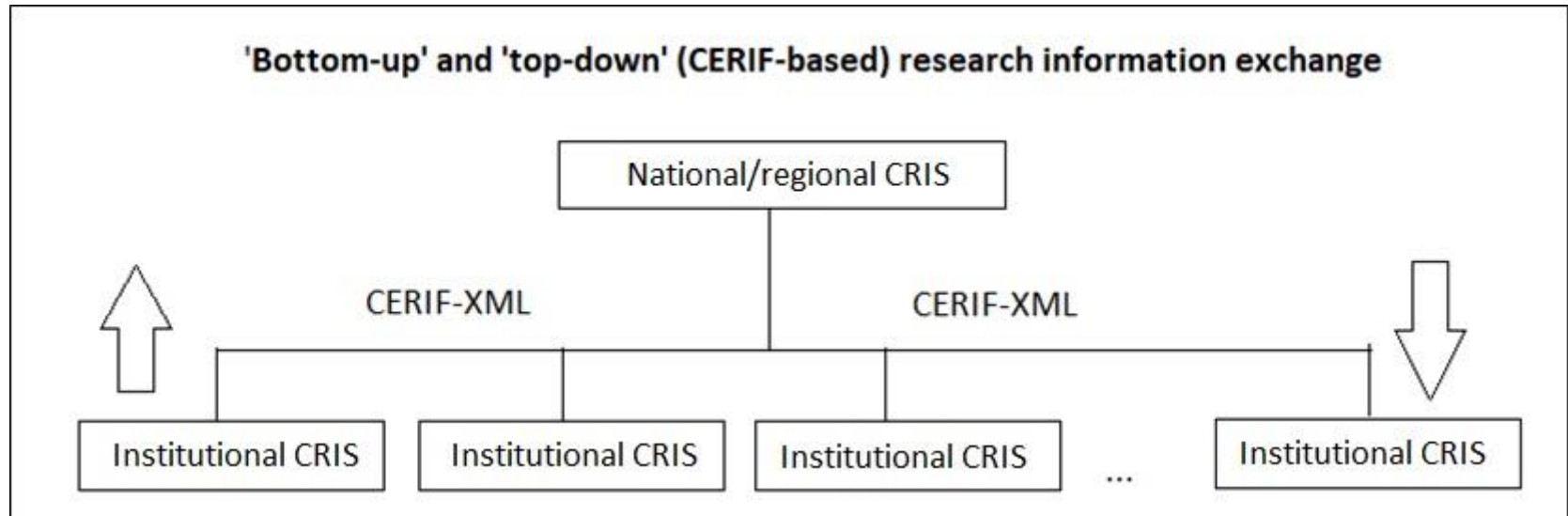
Submission 21

Title	National Research Portal 101: The dos and don'ts of building a sustainable portal
Paper:	 (Feb 15, 14:44 GMT)
Author keywords	research portal best practices national CRIS system interoperability standardization research information exchange digitization project CERIF
	This is a proposal for a CRIS2022 conference workshop to discuss the challenges and opportunities associated with the development of a national research information management system. The activity is conceived as a half-day workshop with the participation of different – mostly European – initiatives and projects to implement national and regional CRIS portals. Since this is planned as an on-site event and an opportunity for a face-to-face discussion in Dubrovnik, where the CRIS2022 conference will be held in May 2022, in-person participation is essential in order to have a lively exchange on the various topics outlined below.

National/regional CRIS in Europe: a snapshot



System interoperability at a national/regional level



- **Bottom-up approach much more frequent than the other way round** (though there are examples for both eg CRISTin, SK CRIS, IS VaVal, ETIS): as a rule institutions are much more agile than states
- **Interoperability rules (usually based on CERIF) must be tightly defined**
regional portals like FRIS or the PRC provide good examples
- **Whether institutional CRIS are homegrown or vendor-supplied *does not make that much difference for interoperability purposes***
- **Small countries and regions tend to outperform large countries** (but again there are numerous counterexamples)

Flanders Research Information Space (FRIS)

Our partners

The FRIS (Flanders Research Information Space) program has been established as close cooperation between the Department of Economics, Science and Innovation and the knowledge institutions in Flanders. With each of them, the Flemish government concluded the necessary agreements to allow data delivery from their systems to the FRIS portal. In this way, the institutions remain the authentic source of their own data, and the exchange of information no longer will be based on ad hoc collecting a set of data for FRIS.

In the past, only the current research information of the Flemish universities was visible on the research portal. Today we can introduce the following institutions as official partners of the FRIS program.

KU Leuven



Situated in Belgium, in the heart of Western Europe, KU Leuven has been a centre of learning for nearly six centuries. Today, it is Belgium's largest university and, founded in 1425, one of the oldest and most renowned universities in Europe. As a leading European research university and co-founder of the League of European Research Universities, KU Leuven offers a wide variety of international master's programmes, all supported by high-quality, innovative, interdisciplinary research.

[Read more...](#)

UAntwerpen



The University of Antwerp is a young, dynamic and forward-thinking university. It integrates the assets of its historic roots with its ambition to contribute positively to society. The University of Antwerp develops, provides access to and disseminates scientific knowledge through research, teaching and service to society. It carries out these tasks in a spirit of academic freedom and responsibility. The University of Antwerp espouses active pluralism.

[Read more...](#)

UGent



Research is the motor of Ghent University. Boundaries are pushed. Researchers make discoveries. These discoveries impact people worldwide, give new impulses to teaching, and provide a foundation for a knowledge society. Over the course of its 200 year history Ghent University has built up a strong scientific reputation. Ghent University invests both in fundamental, high risk science as in applied research. [Read more...](#)

UHasselt



Hasselt University is a young, dynamic centre of expertise for teaching, research and service provision. It regards it as its social responsibility to contribute actively to a sustainable and innovative region. It aspires to be a hub in this innovation web. Hasselt University therefore attaches great importance to cooperation with other centres of expertise, companies, government agencies and organisations in Limburg and beyond.

[Read more...](#)

FRIS IT-Infrastructure

Integration guide

Date: 14/7/2021

Version: 2.12

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CRIS remit: visibility *and* business intelligence

← Tweet



Departement EWI
@Departement_EWI

...

België uiterst gespecialiseerd in plasticrecycling- en bioplastictechnologieën, zo blijkt uit octrooigegevens. Top 5 plasticrecycling: Total, Solvay, Bridgestone, Janssen, KU Leuven. Top 6 bioplastics: Total, Capsugel, GSKl, Solvay, UGent, Agfa-Gevaert
bit.ly/2Z2bE5y

[Translate Tweet](#)

CRIS remit: visibility *and* business intelligence

← Tweet

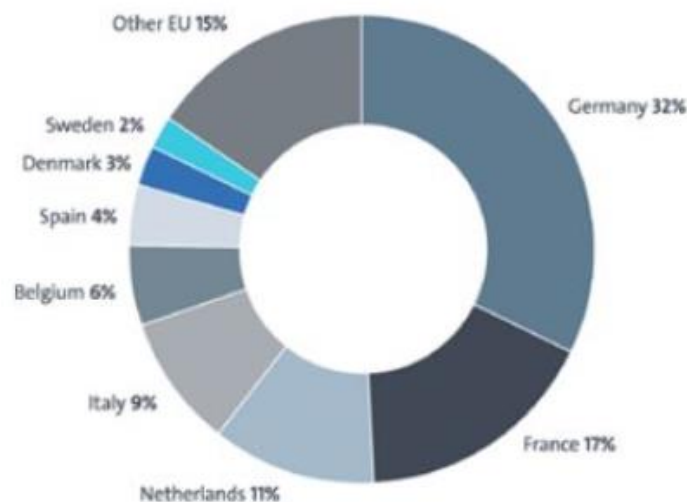


Departement EWI
@Departement_EWI

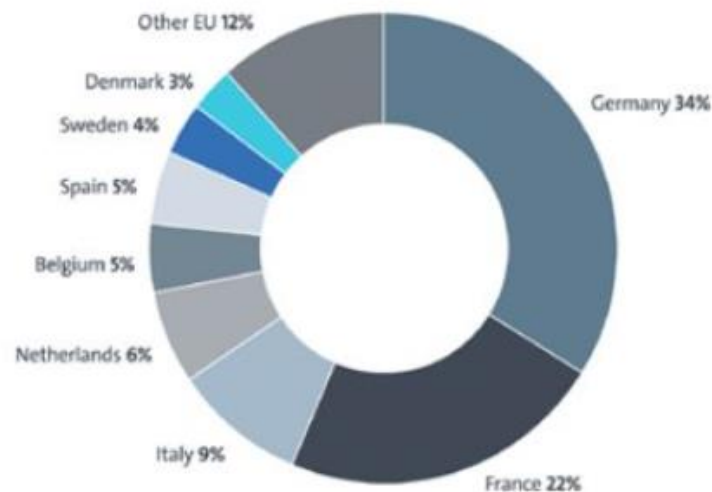
...

België uiterst gespecialiseerd in plasticrecycling- en bioplastictechnologieën, zo blijkt uit octrooigegevens.

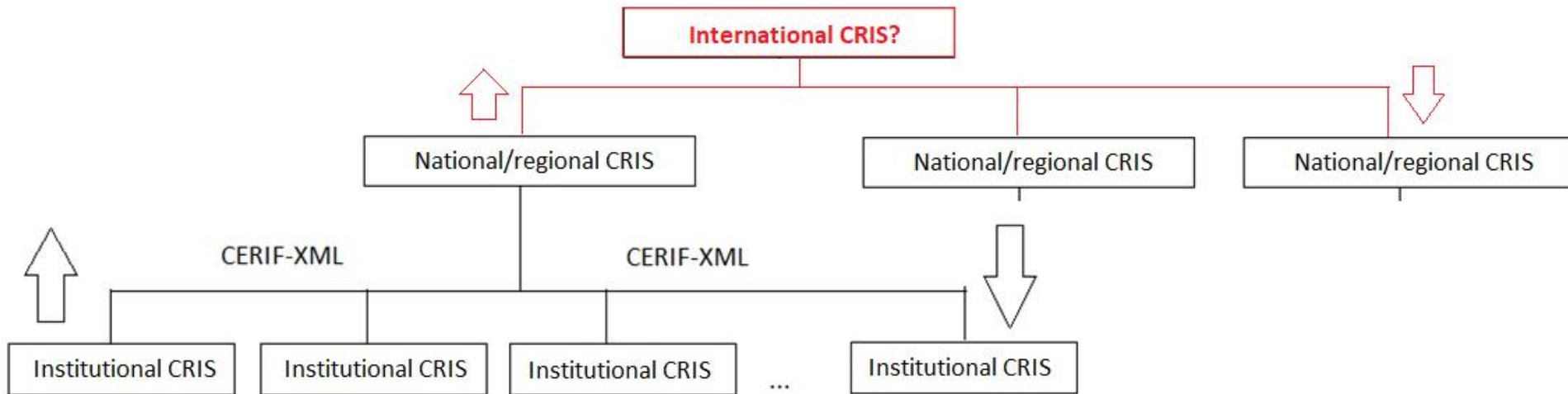
Origin of international patent families
in **plastic recycling technologies** (2010-19), EU27



Origin of international patent families
in **bioplastic technologies** (2010-19), EU27



A further level of system interoperability?



- The main reason why system interoperability works better (and almost exclusively) at a national/regional level is the **shared research assessment framework** – incl research funding scope
- The EU is the obvious exception for an international research funder – and both **CORDIS** and **OpenAIRE** are the EU's international CRIS systems
- **Data standardisation** and **data quality** become instant issues when considering international interoperability (think research classifications for semantic interoperability)...
- This said, **there have been attempts at international CRISs** where research assessment frameworks are reasonably similar across countries...



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2020

Reverse EngiNeering of sOcial Information pRocessing

Fact Sheet

Reporting

Results

Objective

In today's world, access to information is a decisive factor advancing industry, society and even culture. It is therefore of great importance to understand why and how some information (e.g. some memes) spreads virally with great ease, while other is met with disinterest and omission. Uncovering the reasons may allow promoting important information, like warnings about cyber-attacks, while stifle harmful rumors, such as vaccines causing autism. The aim of the project is to treat the vast complexity of such information dynamics in social systems by involving researchers in social sciences, journalism, computing, data mining and complexity science.

The Project's objectives are:

- discovery and reverse-engineering the mechanisms of information spreading in social media, such as dynamics of news releases, blog and internet for posts, Twitter messages, e-mails etc.,
- training and exchange of knowledge between partners in different domains coming from Warsaw University of Technology, Jozef Stefan Institute, Wroclaw University of Technology and leading world universities Stanford University, Rensselaer Polytechnic Institute, Nanyang Technological University,
- bidirectional knowledge transfer between academia and media industry (Slovenian Press Agency) by exposing researchers to real-life problems and giving business access to innovative methods and tools for information analysis.

The project will be based on three pillars: data acquisition, data mining/machine learning and complex systems modeling. The specific problems addressed will include understanding rules of and predicting information spreading in different media and about different topics, finding information sources and uncovering hidden information channels.

Project Information

RENOIR

Grant agreement ID: 691152



Closed project

Start date
1 January 2016

End date
31 December 2019

Funded under
H2020-EU.1.3.3.

Overall budget
€ 1 314 000

EU contribution
€ 1 273 500

Coordinated by
POLITECHNIKA WARSZAWSKA

Poland





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Commission

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EU research results

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2020

Reverse EngiNeering of sOcial Information pRocessing

Fact Sheet

Reporting

Results

Coordinator



POLITECHNIKA WARSZAWSKA

Address

Plac Politechniki 1
00 661 Warszawa
Poland

Website

Activity type

Higher or Secondary
Education Establishments

EU contribution

€ 508 500

Contact the organisation

Participants (3)

Sort alphabetically

Sort by EU Contribution

Expand all



INSTITUT JOZEF STEFAN

Slovenia

EU contribution

€ 301 500



POLITECHNIKA WROCLAWSKA

Poland

EU contribution

€ 346 500



SLOVENSKA TISKOVNA AGENCIJA DOO

Slovenia

EU contribution

€ 117 000

Project Information

RENOIR

Grant agreement ID: 691152



Closed project

Start date

1 January 2016

End date

31 December 2019

Funded under
H2020-EU.1.3.3.

Overall budget
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€ 1 273 500



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Sort alphabetically

INSTITUT JAVNA
Slovenia

POLITECHNIKA
Poland

SLOVENSKA
Slovenia

Publications

Peer reviewed articles (28)

[Coupling of link- and node-ordering in the coevolving voter model](#)

Author(s): J. Toruniewska, K. Kułakowski, K. Suchecki, J. A. Hołyst

Published in: Physical Review E, Issue 96/4, 2017, Page(s) 042306, ISSN 2470-0045

DOI: 10.1103/PhysRevE.96.042306

[WordNet2Vec: Corpora agnostic word vectorization method](#)

Author(s): Roman Bartusiak, Łukasz Augustyniak, Tomasz Kajdanowicz, Przemysław Kazienko, Maciej Piasecki

Published in: Neurocomputing, 2017, ISSN 0925-2312

DOI: 10.1016/j.neucom.2017.01.121

[On Measuring the Complexity of Networks: Kolmogorov Complexity versus Entropy](#)

Author(s): Mikołaj Morzy, Tomasz Kajdanowicz, Przemysław Kazienko

Published in: Complexity, Issue 2017, 2017, Page(s) 1-12, ISSN 1076-2787

DOI: 10.1155/2017/3250301

[Do We Really Need to Catch Them All? A New User-Guided Social Media Crawling Method](#)

Author(s): Fredrik Erlandsson, Piotr Bródka, Martin Boldt, Henric Johnson

Published in: Entropy, Issue 19/12, 2017, Page(s) 686, ISSN 1099-4300

DOI: 10.3390/e19120686

[Tricriticality in the q-neighbor Ising model on a partially duplex clique](#)

Author(s): Anna Chmiel, Julian Sienkiewicz, Katarzyna Sznajd-Weron

Published in: Physical Review E, Issue 96/6, 2017, Page(s) 062137, ISSN 2470-0045

DOI: 10.1103/PhysRevE.96.062137

End date

31 December 2019



The diagram illustrates the relationship between International CRIS, National/regional CRIS, and Institutional CRIS. At the top, a box labeled "International CRIS?" is connected by a horizontal line to three boxes labeled "National/regional CRIS". A red upward arrow points from the first "National/regional CRIS" box to the "International CRIS?" box, and a red downward arrow points from the "International CRIS?" box to the third "National/regional CRIS" box. Below the first "National/regional CRIS" box, a horizontal line connects to four boxes labeled "Institutional CRIS". This line is labeled "CERIF-XML" in two places. A large white upward arrow points from the first "Institutional CRIS" box, and a large white downward arrow points from the last "Institutional CRIS" box. An ellipsis (...) is placed between the third and fourth "Institutional CRIS" boxes.

- Integrated data and analysis on publications to support responsible research evaluation, statistics and science policy in the Nordic countries

System interoperability: getting CRISs harvested by OpenAIRE

BETA

 **OpenAIRE** | EXPLORE

Filters

X CRIS system

Results per page: 10

Type (1) [Clear](#)

CRIS system (18)

Compatibility Level (1)

☐ OpenAIRE CRIS v1.1 (18)

Country (6)

☐ NL (5)
☐ IT (4)
☐ FI (3)
☐ PL (2)
☐ RS (2)
☐ DE (1)

18 CONTENT PROVIDERS, PAGE 1 OF 2

CRIS System
[VTT Research Information System](#)
OPENAIRE CRIS V1.1
Country: Finland
Partners: VTT
Website URL: <https://cris.vtt.fi>

CRIS System
[UnityFVG - Friuli Venezia Giulia](#)
OPENAIRE CRIS V1.1
Country: Italy
Partners: REGIONE FVG
Website URL: <https://www.unityfvg.it>
OAI-PMH URL: <https://www.openstarts.units.it/dspace-oai/openairecris>



The 8th Seminar of University Knowledge Bases

online 07-10 March 2022

Thanks!

Questions?

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